REMARKS/ARGUMENTS

Applicant has reviewed the Office Action mailed on May 21, 2003, as well as the art cited.

In response to the Examiner's objection to Figures 23, 27, 28, 41-46, 61, 62, 68 and 69, Applicant provided amendments to the specification to tie the Figures to the specification in the response to the restriction requirement. Applicant is re-presenting the same amendments to the specification with this response as it is not clear that these amendments were accepted and entered by the Examiner.

Claims 2-5 and 19-36 are currently pending in this application. Claims 7-18 have been withdrawn.

Claims 7-18 have been withdrawn as the result of an earlier restriction requirement.

In view of the Examiner's earlier restriction requirement, Applicant retains the right to present claims 7-18 in a divisional application without prejudice or disclaimer.

The Examiner has provided no rejection to claims 5 and 36 and as a result Applicant assumes that claims 5 and 36 are allowable.

Rejections Under 35 U.S.C. § 101

Claim 27 was rejected under 35 USC § 101 because the disclosed invention is inoperative and therefore lacks utility. As stated in previous office actions, in previous and co-pending applications, and not disputed by the applicant and/or applicant's attorney and/or assignee, deriving a probable bit error rate comprises the step of sampling a (meaning a single) parity bit for the payload channel is impossible. Applicant has amended the claim language of claim 27 to clarify that the parity bits of the payload channel comprises sampling the parity bit of each n-bit word of the payload channel. With this modification, Applicant contends that claim 27 provides a utility and requests that the rejection be withdrawn.

Rejections Under 35 U.S.C. § 112

Regarding Claim 27

Claim 27 was rejected under 35 USC § 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Specifically, the Examiner asserts that the specification fails to provide an enabling disclosure the deriving a probable bit error rate comprises the step of sampling a parity bit for the payload channel, since it is impossible.

Support for deriving a probable bit error rate with respect to claim 27 is found between page 126, line 19 and page 129, line 7 of the specification. In addition, new figure 124 has been added to show the deriving limitation of claim 27. Further, claim 27 has been amended to overcome this rejection. No new matter has been added with the addition of new figure 124. Withdrawal of the rejection is respectfully requested.

Regarding Claims 19-35

Claims 19-35 were rejected under 35 USC § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the Applicant regards as the invention. In particular, the office action states: "The term 'substantially evenly distributed' is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Something cannot be 'substantially evenly distributed," it must be evenly distributed, or not. The Examiner, for examination purposes only, shall take the subbands usually are not over lapping each other, but sometimes they do."

Applicant respectfully traverses this rejection. MPEP 2173.05(b) states in part "The term "substantially" is often used in conjunction with another term to describe a particular characteristic of the claimed invention." Applicant asserts that the term substantially as used in claims 19, 30, 33, 34 and 35 describes how the service units are distributed over a number of subbands – that is they are substantially evenly distributed over the number of subbands of the system. Applicant asserts that the scope of the claims is reasonably ascertainable by those skilled in the art. In addition, support and discussion of distribution is found in several locations within the specification including p. 194, line

26 to p. 195, line 12. The discussion of the distribution is not to be taken in a limiting manner but to provide support for the limitations of claims 19, 30, 33, 34 and 35. The Applicant is not sure why the Examiner "for examination purposes takes the subbands usually are not overlapping each other, but sometimes they do" with respect to this rejection of claim 19-35. The Applicant refers the Examiner to the specification including p. 194, line 26 to p. 195, line 12 as discussed above and specifically traverses the Examiner's assertion. As a result, Applicant requests withdrawal of this rejection.

Rejections Under 35 U.S.C. § 102

Claims 2, 3, 19-25, and 29-35 were rejected under 35 USC § 102(e) as being anticipated by Timm et al. (U.S. Patent No. 6,055,268).

Applicant respectfully traverses this rejection since Timm et al. is not proper prior art against claims 2, 3, 19-25, and 29-35. The subject matter of claims 2, 3, 19-25, and 29-35 was originally presented in prior application Serial No. 08/384,659 and has an effective filing date of February 6, 1995. Timm et al. was filed on June 20, 1996 and is a continuation-in-part of application No. 08/645,020 filed on May 9, 1006. Therefore Timm et al. is not proper prior art against claims 2, 3, 19-25, and 29-35. The Applicant presents the following table that indicates where support for each limitation of claims 2, 3, 19-25, and 29-35 is found in the prior application Serial No. 08/384,659 and the present application. As a result, Applicant respectfully requests withdrawal of this rejection.

Table: Support for claims 2, 3, 19-25, and 29-35

Claim	Location of supporting text in the present Application	Location of supporting text in the '659 Application
2. A telecommunications system with a multi-carrier transmission scheme that dynamically allocates bandwidth among a plurality of service units, the system comprising:		
a head end that transmits data over a transmission medium to the service units, the head end comprising a modem circuit for narrow band transmission in at least one transmission channel, each transmission channel including a number of subbands having a number of payload channels and a control channel in each subband;	p. 32, lines 11-16; p. 32, lines 25-28; p. 34, line 15 – p. 35, line 12; p. 35, line 23 – p. 36, line 5; p. 40, lines 12 – 25; p. 42, line 16 – p. 43, line 17; p. 66, lines 4 – 23	p. 15, lines 21 – 26; p. 16, lines 6-9; p. 19, lines 1-13; p. 23, line 20 – p. 24, line 3; p. 25, line 22 - - p. 26, line 22; p. 41, line 16 – p. 42, line 7; p. 69, line 23, - p. 77, line 26
a control circuit in the head end that assigns each service unit to a subband for transmission and receipt of data; and	p. 192, line 21 – p. 197, line 13.	p. 84, line 8 to p. 85, line 20
the control circuit is further operable to allocate a payload channel to a service unit in response to a request for a service unit.	p. 32, line 9 – p. 33, line 1	p. 84, line 8 to p. 85, line 20
3. The system of claim 2, wherein the control circuit is operable to assign a number of service units to each subband for selective use of the payload channels in the subband by the service units so as to increase the number of service units that can be coupled to the system.	p. 32, line 9 – p. 33, line 1	p. 84, line 8 to p. 85, line 20
4. The system of claim 2, wherein the transmission medium comprises a hybrid fiber-coax telecommunications system.	p. 31, lines 1-2	p. 12, lines 15-18
19. A method for allocating bandwidth in a telecommunications system that uses a multi-carrier transmission scheme with transmission channels that include a number of subbands, each subband including a number of		

payload channels, the method comprising:		
selectively assigning service units to the subbands such that the service units of the telecommunications system are substantially evenly distributed over the number of subbands of the system; and	p. 194, line 26 to p. 197, line 21	p. 89, lines 5-29.
selectively allocating payload channels within a subband to service units assigned to the subband.	p. 32, line 9 – p. 33, line 1	p. 84, line 8 to p. 85, line 20
20. The method of claim 19, wherein selectively assigning service units comprises assigning the service units based on at least one of a type of the service unit, a likely load on a control channel for the service unit, a number of available payload channels in a subband, and historical data on transmission quality over the payload channels of the subband.	p. 132, line 9 – 133, line 1; p. 193, line 21 – p. 195, line 12.	p. 89, lines 5-29.
21. The method of claim 19, wherein selectively assigning service units comprises assigning subbands to service units beginning with subbands substantially at the middle of the available bandwidth.	p. 32, line 9 – p. 33, line 1; p. 194, line 26 to p. 197, line 21	p. 89, lines 5-29.
22. The method of claim 19, wherein selectively assigning service units comprises assigning one or more service units to a selected subband.	p. 32, line 9 – p. 33, line 1; p. 193, line 21 – p. 195, line 12.	p. 84, line 8 to p. 85, line 20
23. The method of claim 19, wherein selectively assigning service units comprises assigning at least two service units of different types to a selected subband.	p. 32, line 9 – p. 33, line 1; p. 193, line 21 – p. 195, line 12.	p. 84, line 8 to p. 85, line 20
24. The method of claim 19, wherein selectively allocating channels within a subband comprises:		
allocating a first payload channel to a service unit in a subband of a transmission channel of the telecommunications system;	p. 32, line 9 – p. 33, line 1	p. 84, line 8 to p. 85, line 20
monitoring the quality of the first payload channel; and	p. 126, line 19 – p. 128, line 20	p. 84, line 8 to p. 85, line 20
when the quality of the first payload channel drops below a	p. 126, line 19 – p. 128, line 20	p. 85, line 12 to p. 86, line 10

threshold, allocating a second, different payload channel to the channel unit.		
25. The method of claim 24, and further comprising the step of deallocating the first payload channel after communication over the second payload channel is established.	p. 32, line 9 – p. 33, line1; p. 193, line 21 – p. 195, line 12.	p. 84, line 8 to p. 85, line 20
26. The method of claim 24, wherein the step of monitoring the quality of the first payload channel comprises the step of deriving a probable bit error rate for the first payload channel.	p. 126, line 19 – p. 128, line 20	p. 84, line 8 to p. 85, line 20
27. The method of claim 26, wherein the step of deriving a probable bit error rate comprises the step of sampling the parity bit of each n-bit word of the payload channel.	p. 126, line 19 – p. 128, line 20	p. 84, line 8 to p. 85, line 20
28. The method of claim 24, wherein the step of allocating a second, different payload channel comprises the step of allocating a second payload channel in the same subband as the first payload channel.	p. 32, line 9 – p. 33, line1; p. 193, line 21 – p. 195, line 12.	p. 84, line 8 to p. 85, line 20
29. The method of claim 19, and further comprising selectively reassigning a service unit to another subband when sufficient channels are not available to handle a request from the service unit.	p. 32, line 9 – p. 33, line1; p. 193, line 21 – p. 195, line 12.	p. 84, line 8 to p. 85, line 20
30. A method for allocating bandwidth in a telecommunications system that uses a multi-carrier transmission scheme with transmission channels that include a number of subbands, each subband including a number of payload channels and at least one control channel, the method comprising:		
selectively assigning a first service unit to a subband located substantially at a center of the bandwidth; and	p. 194, line 26 to p. 197, line 21	p. 89, lines 5-29.
selectively assigning additional service units to the	p. 194, line 26 to p. 197, line 21	p. 89, lines 5-29.

subbands such that the service units of the telecommunications system are substantially evenly distributed over the number of subbands of the system.		
31. The method of claim 30, and further including: selectively allocating channels within a subband to service units assigned to the subband.	p. 32, line 9 – p. 33, line 1	p. 84, line 8 to p. 85, line 20
32. The method of claim 30, wherein selectively assigning a first service unit and selectively assigning additional service units comprises assigning the service units based on at least one of a type of the service unit, a likely load on a control channel for the service unit, a number of available payload channels in a subband, and historical data on transmission quality over the payload channels of the subband.	p. 132, line 9 – 133, line 1; p. 193, line 21 – p. 195, line 12.	p. 84, line 8 to p. 85, line 20
33. A telecommunications system comprising:		
a head end that transmits data over a transmission medium to a number of service units, the head end comprising a modem circuit for transmission in at least one of a number of subbands of a transmission bandwidth, each subband having a number of payload channels and a control channel;	p. 32, lines 11-16; p. 32, lines 25-28; p. 34, line 15 – p. 35, line 12; p. 35, line 23 – p. 36, line 5; p. 40, lines 12 – 25; p. 42, line 16 – p. 43, line 17; p. 66, lines 4 – 23	p. 15, lines 21 – 26; p. 16, lines 6-9; p. 19, lines 1-13; p. 23, line 20 – p. 24, line 3; p. 25, line 22 - - p. 26, line 22; p. 41, line 16 – p. 42, line 7; p. 69, line 23, - p. 77, line 26
a control circuit in the head end that assigns each service unit to a subband such that the service units are substantially evenly distributed over the subbands; and	p. 192, line 21 – p. 197, line 13.	p. 84, line 8 to p. 85, line 20; p. 89, lines 5-29.
the control circuit is further operable to allocate a payload channel to a service unit in response to a request for bandwidth for a service unit.	p. 32, line 9 – p. 33, line 1	p. 84, line 8 to p. 85, line 20
34. A method for allocating bandwidth in a		

telecommunications system that uses a multi-carrier transmission scheme with transmission channels that include a number of subbands, each subband including a number of payload channels, the method comprising:		
selectively assigning a first service unit to a subband located substantially at a center of the bandwidth; and	p. 194, line 26 to p. 197, line 21	p. 89, lines 5-29.
selectively assigning additional service units to the subbands such that the load of the service units of the telecommunications system is substantially evenly distributed over the number of subbands of the system.	p. 132, line 9 – 133, line 1; p. 194, line 26 to p. 197, line 21	p. 89, lines 5-29.
35. A method for allocating bandwidth in a telecommunications system that uses a multi-carrier transmission scheme with a number of subbands, each subband including a number of payload channels, the method comprising:		
determining at least one characteristic of a service unit; and	p. 132, line 9 – 133, line 1; p. 193, line 21 – p. 195, line 12	p. 89, lines 5-29.
selectively assigning the service unit to a subband based on the at least one characteristic such that the service units of the telecommunications system are substantially evenly distributed over the number of subbands of the system.	p. 132, line 9 – 133, line 1; p. 194, line 26 to p. 197, line 21	p. 89, lines 5-29.
36. The method of claim 35, wherein determining at least one characteristic of a service unit comprises determining at least one of a type of the service unit, a likely load on a control channel for the service unit, and a likely load of the service unit.	p. 132, line 9 – 133, line 1; p. 193, line 21 – p. 195, line 12.	p. 89, lines 5-29.

It is understood, that additional support for these claims may be found in other locations within priority Application Serial No. 08/384,659 with corresponding language in the present application.

Rejections Under 35 U.S.C. § 103

Claims 4, 26, 27, and 28 were rejected under 35 USC § 103(a) as being unpatentable over Timm et al. (U.S. Patent No. 6,055,268).

Applicant respectfully traverses this rejection since Timm et al. is not proper prior art against claims 4, 26, 27 and 28. The subject matter of claims 4, 26, 27 and 28 was originally presented in prior application Serial No. 08/384,659 and has an effective filing date of February 6, 1995. Timm et al. was filed on June 20, 1996 and is a continuation-in-part of application No. 08/645,020 filed on May 9, 1996. Therefore Timm et al. is not proper prior art against claims 4, 26, 27 and 28. The Applicant presents the above table that indicates where support for each limitation of claims 4, 26, 27 and 28 is found in the prior application Serial No. 08/384,659 and the present application. As a result, Applicant respectfully requests withdrawal of this rejection.

Further, in responding to the rejections, Applicant does not admit that the references are prior art and does not acquiesce to any of the rejections or statements presented by the Examiner. Applicant specifically reserves the right to swear behind these references at a future date.

Reservation of Right

Applicant expressly reserves the right to swear behind any reference cited by the Examiner under 35 U.S.C. §102(e)/103, 102(a)/103, 102(a), or 102(e). Any statements regarding these references are not an admission that the references are prior art.

CONCLUSION

Applicant respectfully submits that claims 2-5 and 19-36 are in condition for allowance and notification to that effect is earnestly requested. If necessary, please charge any additional fees or credit overpayments to Deposit Account No. 502432.

Respectfully submitted,

Date: 21 October 2003
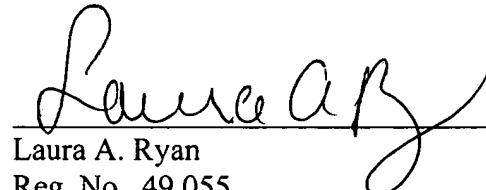
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